

# Installation Instructions - Models 5055R, S5055R

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The operation of your new voltage regulator for the Ford Model T is such that the third brush on the generator sets the maximum charge rate obtainable from the generator. The voltage regulator circuitry senses the current state of charge of the battery and adjusts the generator output power in proportion to the needs of the battery and the electrical system of the car in much the same manner as a modern car voltage regulator.

**WARNINGS!! - This voltage regulator is for use on standard Ford Model T 6 volt *negative ground* generator/6volt battery systems only.** Permanent damage can result if this voltage regulator is connected even momentarily to any other system using 8 or 12 volt battery. Check which post of the battery is connected to the car ground (frame). If the negative (-) terminal is *not* connected to the frame then you do not have the correct voltage regulator or your battery is installed incorrectly!! Do not attempt to proceed until the battery is installed properly!! Never send your regulator to a "generator shop". Follow instructions carefully or you will destroy your new regulator.

**Never short the voltage regulator terminals together** as with a jumper wire to *test* the operation of the regulator or to *flash* the generator - The voltage regulator will be damaged. Remove the voltage regulator from the generator before performing **any** tests on the generator.

Proper operation of the voltage regulator requires a proper setting of the generator third brush. It is assumed that a good battery and a good generator have already been properly installed on the car and that the *main* generator brush assembly has been installed and adjusted properly. A voltage regulator is *not* a cure for a sick generator or sick battery. A voltage regulator is a great improvement to a good electrical system. **Only the generator *third* brush assembly will be adjusted and under no circumstances should the third brush assembly be set for more than 15 Amps of charge.**

**Note:** If your Model T has a fibre drive gear for the timing gear, a lower setting of the third brush is a good idea - using a steel drive gear is better.

Make certain that all electrical connections in the car are clean and tight. Pay particular attention to the wiring and all connections between the generator terminal and the battery. In order to preserve authenticity the regulator output (Battery) terminal is insulated in the exact same manner as the original cutout and this terminal should be inspected regularly to make certain that the regulator cover is not loose and in danger of shorting against the Battery terminal of the regulator. A 25 Amp fuse placed in series with the generator battery wire at or near the battery end is a very good safety measure for protection from shorts in the car and regulator wiring.

**Note:** All generators are not the same with regard to cutout mounting screw locations. Slight bending of the regulator mounting feet may be necessary to line up the mounting holes of your generator with the voltage regulator mounting foot slots.

Install the regulator in place of the cutout and make certain that both regulator mounting screws are tight. Check that none of the screw heads on the bottom of the regulator are touching the generator housing. Make certain that the main generator terminal is tight.

Connect the battery wire (car wiring) to the output (Battery) terminal of the regulator. You may notice a momentary "spark" when the battery wire is first connected to the Battery terminal. **The Ammeter should not show any charge or discharge after the battery wire is connected. Any reading on the Ammeter indicates that something is wrong and your voltage regulator may already be damaged.** Check all connections for shorts to the regulator cover or regulator base.

(CONTINUED ON REVERSE SIDE)

**Do not remove the voltage regulator cover as there are no user serviceable parts or adjustments inside the voltage regulator.**

## **Setting the generator third brush**

A) Loosen the generator dust cover bolt and lift off the dust cover.

B) Loosen the third brush nut and shift the third brush assembly counterclockwise (as viewed from the front of the car) as far as possible.

C) Start the car and bring the engine to a high speed that produces the maximum charge from the generator. Turn on lights and observe an Ammeter reading of 7 to 9 Amps discharge.

D) Advance the third brush setting clockwise (as viewed from the front of the car) until the Ammeter shows a slight charge of 1/2 to 1 Amp with engine at the same high speed. The generator is now putting out 8 to 11 Amps. This should be the correct setting for the third brush. **Do not advance the third brush further or the setting will be too high!!** - The correct setting will occur with the third brush advanced only slightly further than the center of its mechanical adjustment range. **The third brush must *not* be advanced further.**

E) With engine still at high speed turn off lights and observe that the charge rate jumps to 8 to 12 Amps where the charge rate will remain until the battery reaches full charge. It may take a few seconds, a few minutes, or a few hours for the battery to reach full charge. When the battery is nearing full charge, the charging rate will taper off until only 1 to 4 Amps of charge current remain.

**Make certain that the battery charge rate does not exceed 15 Amps during this charge time.** A lower setting of 10 to 12 Amps is best and will result in longer generator life. If charge rate is ever allowed to exceed 15 Amps, generator damage may result. Do not attempt to readjust the third brush once the regulator has begun to taper the charge since the regulator will tend to compensate for the adjustment and it is very easy to advance the third brush too far which will result in generator or voltage regulator failure.

F) Tighten the third brush nut.

G) Check proper operation by idling the engine with lights off and then quickly increasing engine speed. The Ammeter should show a momentary high charge rate (8 to 12 Amps) then regulator action should be observed by a noticeable decrease in charge rate.

H) Install the generator dust cover and tighten the dust cover bolt.

**IMPORTANT!** - A final check must be made after 24 hours of no operation of car or battery by starting the car with the starter and bringing the engine immediately to high speed. With all lights off the Ammeter reading should be at or below 15 Amps. **If higher than 15 Amps, reduce the third brush setting immediately!** This is the maximum reading you should ever see and it will soon taper off once the battery comes up to charge. Thereafter the peak reading will be in the 8 to 12 Amp range. This first reading is higher right after the car is first started because the battery voltage is lowest since the battery has not been charged for 24 hours. **Do not skip this test!**

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